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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/800,543	03/06/2001	Stefan J. Burmeister	01P7507US	4163

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EXAMINER
KAO, CHIH CHENG G

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 09/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/800,543	BURMEISTER, STEFAN J.	
	Examiner	Art Unit	
	Chih-Cheng Glen Kao	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 July 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5,6,9-11,18-20,22-25 and 27-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5,6,9-11,18-20,22-25 and 27-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 July 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-3, 5, 6, 8-11, 18-20, 22-25, and 27-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilliland et al. (US Patent 5812582) in view of Jiang et al. (US Patent 5757829) and Lebby et al. (US Patent 5905750).

2. With regards to claim 1, Gilliland et al. discloses an apparatus and method for coupling optical power into a fiber and separately monitoring optical power (Title and Figs. 1 and 2) comprising a VCSEL array with a first VCSEL (col. 4, lines 25-30) providing light into the fiber (Fig. 1, #96) and means for monitoring optical power output (col. 5, lines 13-20).

However, Gilliland et al. does not disclose a first VCSEL with a first output and a second VCSEL with a different output coupled in parallel with monitoring the second VCSEL output for indication of the first output.

Jiang et al. teaches a first VCSEL with a first output (Fig. 3, #12) and a second VCSEL with a second output (Fig. 3, #10) coupled in parallel with monitoring the second VCSEL output (Fig. 3, #50) for indication of the first output (col. 4, lines 35-47). Lebby et al. teaches a second VCSEL with a different output coupled in parallel (col. 4, lines 40-45).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to substitute the first and second monitored VCSELs of Jiang et al. with the device of Gilliland et al., since one would be motivated by inexpensive costs and easily fabricated power monitor system and automatic power control as implied from Jiang et al. (col. 1, lines 49-65).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to substitute the first and similar monitored VCSELs of Lebby et al. with the device of Gilliland et al. in view of Jiang et al., since one would be motivated to incorporate it for monitoring laser emission as shown by Lebby et al. (col. 4, lines 40-45).

3. With regards to claim 2, Gilliland et al. further discloses mounting the VCSEL and means of monitoring in a TO can (col. 4, lines 25-30).

4. With regards to claim 3, Gilliland et al. further discloses a window through which light from the first VCSEL may pass (Fig. 1, #66).

5. With regards to claim 5, Gilliland et al. further discloses a plurality of electrical connection pins(Fig. 1, #22a, 22b, 22c).

6. With regards to claim 6, Gilliland et al. in view of Jiang et al. and Lebby et al. suggests a device as recited above.

However, Gilliland et al. does not disclose the first and second VCSELs connected to the same pins in parallel.

Jiang et al. further teaches the first and second VCSELs connected to the same electrodes in parallel (Fig. 4).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the first and second VCSELs connected to the same pins in parallel with the suggested device of Gilliland et al. in view of Jiang et al. and Lebby et al., which is explained with motivated as follows.

First, the electrodes of Jiang et al. and the pins of Gilliland et al. are considered art-recognized equivalents in that they are both leads to the VCSELs as shown in Gilliland (Fig. 1) and Jiang et al. (Fig. 4). It would have been within routine skill in the art to substitute one for the other. One would be motivated to connect to pins to allow for external electrical connection as implied from Gilliland et al. (col. 4, lines 37-45).

Secondly, one would be motivated to connect the VCSELs to the same leads, pins, or electrodes to provide equal currents and emissions for monitoring as implied from Jiang et al. (col. 4, lines 1-6).

7. With regards to claim 8, Gilliland et al. in view of Jiang et al. and Lebby et al. suggests a device as recited above.

However, Gilliland et al. does not disclose the same power source to the VCSELs.

Jiang et al. further teaches the same power source to the VCSELs (Fig. 4).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the same power source to the VCSELs with the suggested device of Gilliland et al. in view of Jiang et al. and Lebby et al., since one would be motivated to provide equal currents and emissions for monitoring as implied from Jiang et al. (col. 4, lines 1-6).

8. With regards to claim 9, Gilliland et al. further discloses a monitoring diode in the can (col. 5, lines 10-20).

9. With regards to claim 10, Gilliland et al. in view of Jiang et al. and Lebby et al. suggests a device as recited above.

However, Gilliland et al. does not disclose the current of the diode proportional to light from the second VCSEL.

Jiang et al. further teaches the current of the diode proportional to light from the second VCSEL (col. 4, lines 34-47).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have current proportional to light with the suggested device of Gilliland et al. in view of Jiang et al. and Lebby et al., since one would be motivated to incorporate this for feedback control as implied from Jiang et al. (col. 4, lines 34-47).

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10. With regards to claim 11, Gilliland et al. in view of Jiang et al. and Lebby et al. suggests a device as recited above.

However, Gilliland et al. does not disclose the first VCSEL emitting data in this embodiment.

Gilliland et al. further discloses a laser diode emitting data in the prior art (col. 1, lines 43-51).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the VCSEL emitting data of Gilliland et al. with the suggested device of Gilliland et al. in view of Jiang et al. and Lebby et al., which is explained as follows. First, the laser diode of the prior art and VCSEL are considered art-recognized equivalents in that they ~~are~~ both emit light for laser beams as implied by Gilliland et al. (col. 1, lines 44-51, and col. 3, lines 3-10). It would be within routine skill in the art to substitute one for another. Secondly, one would be motivated to use a laser with data as a way to transfer data as implied from Gilliland et al. (col. 1, lines 44-51).

11. With regards to claim 18, Gilliland et al. discloses an apparatus and method for coupling optical power into a fiber and separately monitoring optical power (Title and Figs. 1 and 2) comprising a VCSEL array with a first VCSEL (col. 4, lines 25-30) and means for monitoring optical power output (col. 5, lines 13-20), mounting the VCSEL and means of monitoring in a TO can (col. 4, lines 25-30), a window through which light from the first VCSEL may pass (Fig. 1, #66), light from the first VCSEL directed into a fiber attached thereto (Fig. 1, #96), and a monitoring diode in the can (col. 5, lines 10-20).

However, Gilliland et al. does not disclose a first VCSEL with a first output and a second VCSEL with a different output coupled in parallel with monitoring the second VCSEL output.

Jiang et al. teaches a first VCSEL with a first output (Fig. 3, #12) and a second VCSEL with a second output (Fig. 3, #10) coupled in parallel with monitoring the second VCSEL output (Fig. 3, #50). Lebby et al teaches a second VCSEL with a different output coupled in parallel (col. 4, lines 40-45).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to substitute the first and second monitored VCSELs of Jiang et al. with the device of Gilliland et al., since one would be motivated by inexpensive costs and easily fabricated power monitor system and automatic power control as implied from Jiang et al. (col. 1, lines 49-65).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to substitute the first and similar monitored VCSELs of Lebby et al. with the device of Gilliland et al. in view of Jiang et al., since one would be motivated to incorporate it for monitoring laser emission as shown by Lebby et al. (col. 4, lines 40-45).

12. With regards to claims 19 and 20, Gilliland et al. in view of Jiang et al. and Lebby et al. suggests a device as recited above.

However, Gilliland et al. does not disclose the first and second VCSELs connected to the same pins in parallel.

Jiang et al. further teaches the first and second VCSELs connected to the same electrodes in parallel (Fig. 4).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the first and second VCSELs connected to the same pins in parallel

with the suggested device of Gilliland et al. in view of Jiang et al. and Lebby et al., which is explained with motivated as follows.

First, the electrodes of Jiang et al. and the pins of Gilliland et al. are considered art-recognized equivalents in that they are both leads to the VCSELs as shown in Gilliland (Fig. 1) and Jiang et al. (Fig. 4). It would have been within routine skill in the art to substitute one for the other. One would be motivated to connect to pins to allow for external electrical connection as implied from Gilliland et al. (col. 4, lines 37-45).

Secondly, one would be motivated to connect the VCSELs to the same leads, pins, or electrodes to provide equal currents and emissions for monitoring as implied from Jiang et al. (col. 4, lines 1-6).

13. With regards to claims 22, Gilliland et al. discloses a method for fabricating a device capable of coupling optical power into a fiber and separately monitoring optical power (Title and Fig. 1) and mounting a VCSEL array and means for monitoring power output in a TO can (Fig. 1, #66).

However, Gilliland et al. does not disclose means for monitoring operating independent of angle of reflected light and effects of temperature thereon, nor a first VCSEL with a first output and a second VCSEL with a different output coupled in parallel with monitoring the second VCSEL output, nor the same power source to the VCSELs.

Jiang et al. teaches means for monitoring operating independent of angle of reflected light and effects of temperature thereon (Fig. 3, #10, 12, and 50). Jiang et al. teaches a first VCSEL (Fig. 3, #12) and a second VCSEL (Fig. 3, #10) coupled in parallel with monitoring the second

VCSEL output (Fig. 3, #50). Jiang et al. further teaches the same power source to the VCSELs (Fig. 4). Lebby et al. teaches a second VCSEL with a different output coupled in parallel (col. 4, lines 40-45).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the VCSEL emitting data of Gilliland et al. with the device of Gilliland et al., which is explained as follows. First, the laser diode of the prior art and VCSEL are considered art-recognized equivalents in that they ~~are~~ both emit light for laser beams as implied by Gilliland et al. (col. 1, lines 44-51, and col. 3, lines 3-10). It would be within routine skill in the art to substitute one for another. Secondly, one would be motivated to use a laser with data as a way to transfer data as implied from Gilliland et al. (col. 1, lines 44-51).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the means for monitoring operating independent of angle of reflected light and effects of temperature thereon of Jiang et al. with the device of Gilliland et al., since one would be motivated by inexpensive costs and easily fabricated power monitor system and automatic power control as implied from Jiang et al. (col. 1, lines 49-65).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to substitute the first and second monitored VCSEL of Jiang et al. with the device of Gilliland et al., since one would be motivated by inexpensive costs and easily fabricated power monitor system and automatic power control as implied from Jiang et al. (col. 1, lines 49-65).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the same power source to the VCSELs of Jiang et al. with the

suggested device of Gilliland et al. in view of Jiang et al., since one would be motivated to provide equal currents and emissions for monitoring as implied from Jiang et al. (col. 4, lines 1-6).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to substitute the first and similar monitored VCSELs of Lebby et al. with the device of Gilliland et al. in view of Jiang et al., since one would be motivated to incorporate it for monitoring laser emission as shown by Lebby et al. (col. 4, lines 40-45).

14. With regards to claim 23, Gilliland et al. further discloses a window in the TO can through which light from the first VCSEL may pass (Fig. 1, #66).

15. With regards to claim 24, Gilliland et al. further discloses light from the first VCSEL directed into a fiber attached thereto (Fig. 1, #96).

16. With regards to claim 25, Gilliland et al. in view of Jiang et al. and Lebby et al. suggests a method as recited above.

However, Gilliland et al. does not disclose the first and second VCSELs connected to the same pins in parallel.

Jiang et al. further teaches the first and second VCSELs connected to the same electrodes in parallel(Fig. 4).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the first and second VCSELs connected to the same pins in parallel

with the suggested method of Gilliland et al. in view of Jiang et al. and Lebby et al., which is explained with motivated as follows.

First, the electrodes of Jiang et al. and the pins of Gilliland et al. are considered art-recognized equivalents in that they are both leads to the VCSELs as shown in Gilliland (Fig. 1) and Jiang et al. (Fig. 4). It would have been within routine skill in the art to substitute one for the other. One would be motivated to connect to pins to allow for external electrical connection as implied from Gilliland et al. (col. 4, lines 37-45).

Secondly, one would be motivated to connect the VCSELs to the same leads, pins, or electrodes to provide equal currents and emissions for monitoring as implied from Jiang et al. (col. 4, lines 1-6).

17. With regards to independent claims 27 and 29, Gilliland et al. discloses a method for coupling optical power into a fiber and ~~separating~~ separately monitoring optical power (Title and Fig. 1) comprising a VCSEL array (col. 4, lines 25-30) and means for monitoring optical power output (col. 5, lines 13-20). Gilliland et al. further discloses light from the first VCSEL directed into a fiber attached thereto (Fig. 1, #96).

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However, Gilliland et al. does not disclose a first VCSEL with a first output and a second VCSEL with a different output coupled in parallel with monitoring the second VCSEL output for indication of the first VCSEL, nor the same power source to the VCSELs (Fig. 4), nor the first VCSEL emitting data in this embodiment.

Jiang et al. teaches a first VCSEL with a first output (Fig. 3, #12) and a second VCSEL with a second output (Fig. 3, #10) coupled in parallel with monitoring the second VCSEL output

(Fig. 3, #50) for indication of the first output (col. 4, lines 35-47). Jiang et al. further teaches the same power source to the VCSELs (Fig. 4). Gilliland et al. further discloses a laser diode emitting data in the prior art (col. 1, lines 43-51). Lebby et al. teaches a second VCSEL with a different output coupled in parallel (col. 4, lines 40-45).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to substitute the first and second monitored VCSEL of Jiang et al. with the device of Gilliland et al., since one would be motivated by inexpensive costs and easily fabricated power monitor system and automatic power control as implied from Jiang et al. (col. 1, lines 49-65).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the same power source to the VCSELs of Jiang et al. with the suggested device of Gilliland et al. in view of Jiang et al., since one would be motivated to provide equal currents and emissions for monitoring as implied from Jiang et al. (col. 4, lines 1-6).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the VCSEL emitting data of Gilliland et al. with the suggested device of Gilliland et al. in view of Jiang et al., which is explained as follows. First, the laser diode of the prior art and VCSEL are considered art-recognized equivalents in that they ~~are~~ both emit light for laser beams as implied by Gilliland et al. (col. 1, lines 44-51, and col. 3, lines 3-10). It would be within routine skill in the art to substitute one for another. Secondly, one would be motivated to use a laser with data as a way to transfer data as implied from Gilliland et al. (col. 1, lines 44-51).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to substitute the first and similar monitored VCSELs of Lebby et al. with the device of Gilliland et al. in view of Jiang et al., since one would be motivated to incorporate it for monitoring laser emission as shown by Lebby et al. (col. 4, lines 40-45).

18. With regards to claim 28, Gilliland et al. further discloses mounting a VCSEL array and means of monitoring in a TO can (col. 4, lines 25-30).

19. With regards to claims 30-33, Gilliland et al. in view of Jiang et al. and Lebby et al. suggests a device as recited above.

However, Gilliland et al. does not disclose the second output as a percentage or multiple of the first output.

Lebby et al. teaches the second output as similar to the first output (col. 4, lines 40-45).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the second output as a percentage or multiple with the first with the suggested device of Gilliland et al. in view of Jiang et al. and Lebby et al., which is explained with motivated as follows.

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It would have been obvious to have a percentage or multiple, since ~~wince~~ where the general conditions of a claim are disclose in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. One would be motivated to have a percentage for the second output to reduce the power requirements needed to run the device. One would be motivated to have a multiple for the second output to ensure that the photodiode receives a

signal. For example, if the threshold of the detector for detecting a signal was just the normal signal output of the second VCSEL, a small amount of degradation in the output of the second VCSEL due to age may create a lower intensity signal, which would not trigger the photodetector. Thus the photodetector may output a signal indicating that the first VCSEL is not operating correctly due to the age and degradation of the second VCSEL, not the output of the first VCSEL. Having a multiple for the second VCSEL avoids this problem, since degradation of the signal of the second VCSEL would still be above the threshold of triggering the photodetector to indicate that the first VCSEL is still in an active state.

Response to Arguments

20. The objections made of record in the Office Action of 3/28/03 have been withdrawn in light of the Amendment made of record on 7/2/03.

21. Applicant's arguments with respect to claims 1-3, 5, 6, 8-11, 18-20, 22-25, and 27-33 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (703) 605-5298. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (703) 308-4858. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

gk
8/27/03

EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER